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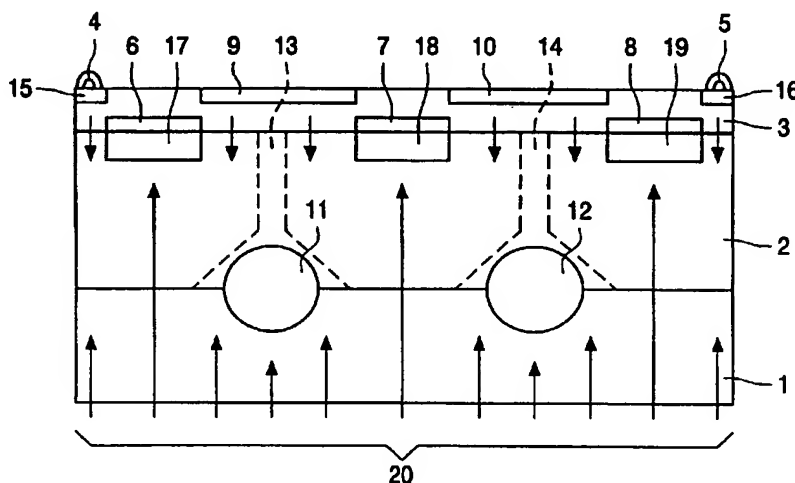
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(54) Title: UPSIDE-DOWN PHOTO DETECTOR



(57) Abstract: The efficiency of photo diodes is according to a basic idea improved by using them upside-down through letting the light (20) enter via the substrate layer (1), and by using the surface layer (3) as a mirror. Then, the epitaxial layer (2) has an approximately doubled chance to convert photons to electron-hole-pairs: either during a first pass when coming from the substrate layer (1) or during a second pass after being reflected at the surface layer (3). The surface layer (3) comprises metal stripes (6,7,8) and metal mirrors (9,10) and comprises metal areas (15,16) coupled to solder bumps (4,5) for precisely mounting said photo detector on a flexible printed-circuit board. The epitaxial layer (2) and areas (17,18,19) in the epitaxial layer (2) form electrodes of a first diode, and the epitaxial layer (2) and the substrate layer (1) form electrodes of a second diode which approximately doubles said efficiency again when adding the photocurrents of both diodes. A substrate layer (1) comprising silicon-on-insulator and/or an etch stopper can be easily made thinner by removing the silicon and/or by etching until said etch stopper.



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